This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (currently amended) A method of ~~synergistic production~~ coordinate control of movements in the upper airway during swallowing in a subject, comprising:

a) implanting ~~chronic implantation of~~ at least two different intramuscular stimulators into a thyrohyoid muscle and at least one other hyoid muscle ~~different muscles~~ involved in the upper airway and vocal tract of the subject ,

b) implanting ~~chronic implantation of~~ a signal generator in the subject that generates electrical pulses to the at least two intra-muscular stimulators at a frequency of about 10 to 75 Hz;

wherein electrical pulses from the signal generator activate the at least two different muscles to produce the ~~synergistic~~ coordinate movement control during swallowing ~~the activity~~.

2. (currently amended) The method of claim 1, wherein at least two different muscles are chronically implanted and the ~~synergistic~~ coordinate control comprises enhancing a portion of the complex pattern of movements, or producing a portion of the complex pattern of movements.

3. (currently amended) The method of claim 1, wherein the at least one hyoid muscle is ~~two muscles are~~ selected from the group consisting of at least one mylohyoid muscle, one hyoglossus, at least one geniohyoid muscle, and combinations thereof ~~and at least one thyrohyoid muscles and the synergistic movement comprises raising of the larynx and opening of the upper esophageal sphincter~~.

4. (currently amended) The method of claim 1, wherein the signal generator generates electrical pulses to the at least two intramuscular stimulators in a manner suitable for initiating movements in ~~a person~~ a subject delayed in initiating movement during ~~speech,~~ swallowing ~~or voice~~.

5. (currently amended) The method of claim 1, wherein the signal generator generates electrical pulses to the at least two intramuscular stimulators in a manner suitable for augmenting movement in a subject ~~a person~~ with limited range and speed of movement during ~~speech,~~ swallowing ~~or voice~~.

6. (currently amended) The method of claim 1, wherein the ~~at least two~~ muscles protect the airway during food ingestion ~~using chronic implantation of intramuscular stimulators~~.

7. (currently amended) The method of claim 1, wherein the ~~at least two~~ muscles protect the airway during food ingestion by raising the hyo-larynx to reduce the entry to the vestibule

8. (currently amended) The method of claim 1, wherein the ~~at least two~~ muscles raise the hyo-larynx and/or open the upper esophageal sphincter.

9. (currently amended) The method of claim 1, further comprising a switch located outside the subject's ~~user's~~ body and operable by the ~~implanted~~ subject ~~user~~, wherein the switch activates ~~either~~ the implanted signal generator ~~or the controller to the signal generator~~ to control either the onset and/or offset of stimulation of ~~chronically~~ the at least two implanted stimulators ~~in the upper airway~~.

10. (currently amended) The method of claim 1, further comprising a switch located outside the subject's ~~user's~~ body and operable by the subject ~~implanted user~~, wherein the switch activates the implanted signal generator ~~or the controller to the signal generator for controlled~~ to control intramuscular stimulation to prevent aspiration during swallowing.

11.-12. (cancelled)

13. (currently amended) A method of moving the hyoid bone, and/or parts of the upper airway ~~and/or vocal tract~~ within an animal by two or more different controlled muscles, comprising:

a) implanting at least one electrode into each of two or more different muscles, wherein one of the muscles is the thyrohyoid and the other muscle of the two or more different muscles is a hyoid muscle ;

b) electrically connecting each electrode to [[a]] an indwelling subcutaneous signal generator capable of generating a pattern of stimulation; and

c) energizing the controlled muscles at the same time with a signal of about 10 to 75 Hz by the signal generator to synergistically move the parts of the upper airway, or hyoid bone ~~or vocal tract~~.

14. (currently amended) The method of claim 13, wherein the animal is a human and step c) is carried out by operating a switch ~~switching~~ under conscious control of the ~~implanted~~ human.

15. (currently amended) The method of claim 13, wherein the hyoid muscle is ~~implanted muscles are~~ selected from the group consisting of the mylohyoid muscles, the hyoglossus,the geniohyoid muscles, and combinations thereof ~~the thyrohyoid muscles~~.

16. (original) The method of claim 13, wherein the hyoid bone is moved by simultaneous stimulation of at least one mylohyoid muscle, hyoglossus and at least one geniohyoid muscle.

17. (currently amended) A method of simultaneously moving the hyoid bone and larynx and opening the upper esophageal sphincter within an human via at least one muscle attached to the hyoid bone, comprising:

implanting at least one electrode into each of two or more said muscles;

electrically connecting each electrode to a signal generator capable of generating a complex pattern to activate the muscle attached to the electrode; and

energizing electrodes in at least two of the muscles at the same time at a frequency of 10 to 75 Hz with the signal generator, thereby synergistically moving the hyoid bone and/or opening the upper esophageal sphincter.

18. (original) The method of claim 17, wherein one or more of the electrodes are Peterson-like electrodes.

19. (currently amended) A method of compensating for variations in electrode placement when stimulating two or more muscles to effect a coordinated ~~synergistic~~ bone, sphincter, structure, tissue or cartilage movement in the hypopharynx, or upper airway ~~or vocal tract~~ movement, comprising:

a) implanting a first electrode in a thyrohyoid muscle;

b) implanting a second electrode in at least one hyoid muscle;

c) stimulating the first electrode and determining the effect of stimulation on movement of the bone, sphincter, tissue, structure or cartilage;

d) stimulating the second electrode implanted in the tissue and determining the effect of stimulation on movement of the bone, sphincter, tissue, structure or cartilage; and comparing the effects from c) and d) to determine an optimum coordination of signals to the first and second electrodes to obtain a desired direction and strength of the bone, sphincter, tissue, structure or cartilage movement.

20. (original) The method of claim 19, wherein the strength and timing of the electrical signal to at least one of the electrodes implanted in the tissue is altered to compensate for the effect of electrode placement on the induced movement.

21. (currently amended) A system for coordinating the onset and offset of two or more different electrical signals to electrodes implanted in tissue used to coordinately control ~~synergistically effect~~ a bone, sphincter, tissue, structure or cartilage movement in the hypopharynx, or upper airway ~~or vocal tract~~, the system comprising:

a controller with a stored program that directs a signal generator to send electrical pulses to each of at least two electrodes in the determined pattern , wherein the determined pattern of electrical pulses coordinates the onset and offset of two or more different electrical signals, each signal sent to a different electrode implanted in the tissue,

[[a]] the implantable signal generator,

the at least two intramuscular electrodes ~~implanted in different muscles~~ operably connected to the signal generator, and

a sensor device;

wherein the controller under the direction of the stored program directs the signal generator to coordinate the onset and offset of two or more different electrical signals to activate each of the intra-muscular electrodes to move the bone, sphincter, tissue, structure or cartilage.

22. (original) The system of claim 21, wherein one signal generator is used to control all electrodes, and the sensor device measures the movement of a body part.

23. (original) The system of claim 21, wherein movement of either the hyoid bone, the thyroid prominence, the larynx, the upper esophageal sphincter, upper airway or vocal tract are transduced.

24. (currently amended) A system for moving a cartilage within an animal, comprising:

a first electrode implanted in a first hyo-laryngeal muscle attached to the cartilage and operably connected to a signal generator;

a second electrode implanted in a second different hyo-laryngeal muscle attached to the same cartilage and operably connected to the signal generator; ~~and~~ wherein

[[a]] the signal generator is implanted and ~~that sends a~~ generates a signal of about 10 to 75 Hz ~~pulses~~ to the first and second electrodes at the same time; and

a switch operable by the animal that controls the signal generator;

wherein the signal ~~pulses~~ from the signal generator energizes the first and second implanted hyo-laryngeal muscles to effect a coordinated ~~synergistic~~ movement in the cartilage that exceeds the movements made by pulses sent to the muscles at separate times.

25. (original) The system of claim 24, wherein the animal is a human.

26. (original) The system of claim 24, wherein the cartilage is a laryngeal cartilage.

27. (original) The system of claim 24, wherein the cartilage is the thyroid cartilage.

28. (currently amended) A system for ~~long term~~ control of stimulation during swallowing of a human with dysphagia comprising:

at least two intra-muscular electrodes;

a signal generator connected to the at least two ~~or more~~ electrodes that outputs energy to the electrodes according to a determined pattern,

a controller with a stored program that directs the signal generator to send electrical pulses to each of the at least two electrodes in the determined pattern , wherein the determined pattern of electrical pulses comprises a frequency of about 10 to 75 Hz and moves at least two different muscles that control hyoid bone movement so that the hyoid bone moves forward and up;

a power supply that provides energy for the signal generator; and

a switch operable by the ~~implanted~~ human that controls the signal generator, wherein the ~~electrodes are imbedded in at least two different muscles of the human's hyolaryngeal complex that control hyoid movement and laryngeal elevation to protect the airway and~~ operation of the switch by the ~~implanted~~ human activates the controller to direct the signal generator to send electrical pulses to each of the at least two electrodes in the determined pattern ~~causes contraction of the at least two different muscles to prevent aspiration during swallowing~~.

29. (original) The system of claim 28, wherein the intramuscular electrodes are Peterson-like electrodes.

30. (original) The system of claim 28, wherein the signal generator is imbedded within the human.

31. (original) The system of claim 28, wherein the signal generator and power supply are provided within the same implant.

32. (original) The system of claim 28, wherein the signal generator further includes a processor for controlling the output energy.

33. (currently amended) The system of claim 28, further comprising a weak muscle contraction signal detection circuit comprised of:

an electrode embedded in a muscle used for swallowing;

an electrical lead from the embedded electrode to a signal processor to recognize a detected weak signal indicating a desire to swallow;

a trigger input to the controller from the signal processor upon recognition of the detected signal; and

a stored program in the controller that directs the signal generator to output muscle contraction signals through electrodes to the at least two muscles ~~in the hyolaryngeal complex~~ in response to recognition of the detected weak signal.

34. (original) The system of claim 33, wherein the electrode embedded in a muscle used for swallowing also is used for stimulating the muscle.

35. (currently amended) The system of claim 28, wherein at least two different muscles ~~of the human's hyolaryngeal complex~~ are selected from the group consisting of the intrinsic laryngeal muscle(s), the extrinsic laryngeal muscle(s), the bilateral mylohyoid muscle(s), the bilateral thyrohyoid muscle(s), the bilateral geniohyoid muscle(s), the unilateral mylohyoid muscle(s), the unilateral geniohyoid muscle(s), the unilateral thyrohyoid muscle(s), the unilateral thyroarytenoid muscle(s), and the bilateral thyroarytenoid muscle(s).

36.-43 (cancelled)

44. (new) The system of claim 28, wherein the system further comprises an embedded sensor that detects physiological movement, and wherein the controller also has a stored program that directs the signal generator to send a reference signal to each of the at least two electrodes embedded in muscle.

45. (new) The system of claim 28, wherein the stored program directs the signal generator to send the signal to each of the at least two electrodes embedded in muscle at overlapping times.

46. (new) The system of claim 45, wherein the stored program directs the signal generator to send the signal to each of the at least two electrodes embedded in muscle at the same time.

47. (new) The system of claim 28, wherein the stored program directs the signal generator to send a signal with a complex wave form.